



Pediatric Environmental Emergencies: Hyperthermia

I. All Provider Levels



1. Follow general patient care guidelines in section A1.
2. Observe and document patient presentation (including the presence and absence of the following):
 - A. Heat Cramps
 - i. Acute painful spasms of the voluntary muscles following strenuous activity in hot environments without adequate fluid or salt intake.
 - B. Heat Exhaustion
 - i. Acute reaction to heat exposure. Blood pools in the vessels as the body attempts to give off excessive heat. It can lead to collapse due to inadequate blood return to the heart.
 - C. Heat Stroke
 - i. Acute, dangerous reaction to heat exposure, characterized by a body temperature usually above 106° F (41.1° C). The body ceases to perspire.
3. Establish patient responsiveness. If cervical spine trauma is suspected, manually stabilize the spine.
4. Check the airway. Open the airway using a head tilt chin lift if no spinal trauma is suspected, or modified jaw thrust if spinal trauma is suspected. Suction as necessary. Consider placing an oropharyngeal or nasopharyngeal airway adjunct if the airway cannot be maintained with positioning.
5. Assess the patient's mental status.



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6. Assess the patient's breathing including rate, auscultation, inspection, effort and adequacy of ventilation as indicated by chest rise.
 - A. Obtain a pulse oximeter reading.
7. If no breathing is present, then position the airway and start bag valve mask ventilations using 100% oxygen.
 - A. Refer to the vital signs chart for appropriate rates.
8. If airway cannot be maintained, begin ventilations with B-V-M and initiate advanced airway management using a combi-tube.



Note Well: *Do not use a combi-tube on a patient younger than 16 years of age or less than 5-feet tall.*



Note Well: *The EMT-I and EMT-P should use ET intubation.*

9. If breathing is adequate, place the child in a position of comfort and administer high flow, 100% oxygen.
 - A. Use a non-rebreather or blow by as tolerated.
10. Assess circulation and perfusion. If no pulse is present, refer to the appropriate cardiac algorithm.
11. Remove patient from hot environment.
 - A. Place patient in a position of comfort
 - i. If signs of poor perfusion are present, place patient in the Trendelenburg position
 - B. Cool the patient by placing cold packs in the armpits and cold towels on his/her forehead.



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12. Call for ALS support. Initiate care and do not delay transport waiting for an ALS unit.
13. If the patient is unstable, initiate IV access and administer normal saline at a KVO rate.



Note Well: *BLS Providers cannot start an IV on a patient less than eight years of age*



Note Well: *An ALS unit must be en route or on scene.*



Note Well: *Do Not Delay Transport to Obtain IV Access.*



Note Well: *If IV access cannot be readily established and the child is younger than 6 years of age then ALS Providers only may proceed with IO access. If the child is over 6 years of age, then contact Medical Control for IO access.*



II. Advanced Life Support Providers

1. Initiate cardiac monitoring.
 - A. Treat any arrhythmias using the appropriate algorithm.
2. If signs and symptoms of shock exist, administer a bolus of Normal Saline at 20 cc/kg.



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III. Transport Decision

1. Contact medical control for additional instructions.
2. If spinal trauma is suspected, continue manual stabilization, apply a rigid cervical collar, and immobilize the patient on a long backboard or similar device.
3. If the child's condition is unstable, initiate transport.
 - A. Perform focused history and detailed physical examination en route to the hospital if patient status and management of resources permit.
4. Initiate transport to the nearest appropriate facility as soon as possible.
5. Perform focused history and detailed physical exam en route to the hospital.
6. Reassess at least every 3-5 minutes, more frequently as necessary and possible.



IV. The Following Options are Available by Medical Control Only

1. IO access for patients greater than 6 years of age.



This protocol was developed and revised by Children's National Medical Center, Center for Prehospital Pediatrics, Division of Emergency Medicine and Trauma Services, Washington, D.C.
